REMARKS

This amendment is submitted in response to the non-final Office Action mailed June 5, 2007 ("Office Action"). After entry of this amendment, claims 1-18 will be pending. Claims 1, 4, and 5 are independent. In the Office Action, the Examiner:

- rejected claims 1, 4, 5, and 8 under 35 U.S.C. § 102(b) ("Section 102(b)") as unpatentable over Sachinopoulou *et al.*, Invited Review Transmyocardial Revascularization, *Lasers in Medical Science*, 1995, 10:83-91 ("Sachinopoulou"); and
- rejected claims 2, 3, 6, and 7 under 35 U.S.C. § 103(a) ("Section 103(a)") as being unpatentable over Sachinopoulou in view of U.S. Pat. No. 6,283,935 to Laufer *et al.* ("Laufer").

Paragraphs [0006] and [0011] of the specification have been amended to correct formal matters. No new matter has been added.

Claims 1, 2, 4, 5, and 7 have been amended to correct formal matters. Claims 9-18 have been added. Claims 9 and 14 recite that the demand for oxygen is sustained by chemical methods. Claims 10 and 15 recite that the demand for oxygen is sustained by at least one implant. Claims 11 and 16 recite that the demand for oxygen is sustained by at least one viral carrier. Claims 12 and 17 recite that the demand for oxygen is sustained by requiring the patient to follow an exercise regimen. Claims 13 and 18 recite that the demand for oxygen is sustained by introducing a second stimulus. Support for these amendments is found at, *inter alia*, paragraphs [0011] – [0012] of the specification as filed. No new matter has been added.

Rejections Under Section 102(b)

Claims 1, 4, 5, and 8 are rejected under Section 102(b) as unpatentable over Sachinopoulou. This rejection is respectfully traversed.

Independent claims 1, 4, and 5 recite "imaging the patient's heart, or a portion thereof, to identify (i) an underperfused region of cardiac muscle, (ii) a source of oxygenated blood that is proximate a boundary of the underperfused region, and (iii) a target area that includes said underperfused-region boundary and a tissue expanse lying between said oxygenated blood supply and said boundary" Sachinopoulou does not disclose, teach, or suggest imaging a heart "to identify (i) an underperfused region of cardiac muscle, (ii) a source of oxygenated blood that is proximate a boundary of the underperfused region, and (iii) a target area that

includes said underperfused-region boundary and a tissue expanse lying between said oxygenated blood supply and said boundary." While the Examiner asserts that Sachinopoulou teaches the use of imaging (Office Action at 2), the Examiner has not identified that Sachinopoulou uses imaging as recited in claims 1, 4, and 5, nor does Sachinopoulou teach such use of imaging. Sachinopoulou's general teaching of imaging, or teaching of imaging to identify a target area without the qualities recited in claims 1, 4, and 5, is insufficient to teach or suggest the recitation in claims 1, 4, and 5.

Additionally, claims 1, 4, and 5 recite "sustaining a demand for oxygen at the underperfused region for a period sufficient to convert the capillary network into an arterial network." Sachinopoulou does not disclose, teach, or suggest sustaining a demand for oxygen. Further, the Examiner has not submitted that Sachinopoulou discloses sustaining a demand for oxygen.

Further, claim 4 recites "imaging the patient's heart, or a portion thereof, to identify . . . a source of oxygenated blood[,] . . . wherein the source of oxygenated blood is one in which arteries less than about 1 mm branch into a plurality of surrounding arterioles, and in which arterioles with inner lumen diameters between about 50-200 microns are plentiful." Sachinopoulou does not disclose, teach, or suggest imaging the patient's heart to identify a source of oxygen blood "in which arteries less than about 1 mm branch into a plurality of surrounding arterioles, and in which arterioles with inner lumen diameters between about 50-200 microns are plentiful." In fact, Sachinopoulou does not disclose, teach, or suggest anything about the size of the arteries and arterioles at a source of oxygenated blood.

Further, claim 5 recites introducing a stimulus, wherein the stimulus is a mechanical injury, and "where the depth and width of said channels, combined with the blood turbulence produced within the ventricle, is such as to minimize accumulation of blood clot material in the channels." Sachinopoulou does not disclose, teach, or suggest introducing a stimulus, wherein the stimulus is a mechanical injury, and "where the depth and width of said channels, combined with the blood turbulence produced within the ventricle, is such as to minimize accumulation of blood clot material in the channels."

Therefore, Sachinopoulou does not disclose each and every element of independent claims 1, 4, and 5. Thus, the rejection of claims 1, 4, and 5 by Sachinopoulou should be withdrawn. Because claim 8 depends from claim 5, the rejection of claim 8 by Sachinopoulou should be withdrawn for at least the same reasons that the rejection of claim 5

should be withdrawn.

Rejections Under Section 103(a)

Claims 2, 3, 6, and 7 are rejected under Section 103(a) as unpatentable over Sachinopoulou in view of Laufer. This rejection is respectfully traversed.

As discussed above, Sachinopoulou fails to disclose, teach, or suggest each and every element of independent claims 1 and 5. In particular, Sachinopoulou fails to disclose, teach, or suggest "imaging the patient's heart, or a portion thereof, to identify (i) an underperfused region of cardiac muscle, (ii) a source of oxygenated blood that is proximate a boundary of the underperfused region, and (iii) a target area that includes said underperfused-region boundary and a tissue expanse lying between said oxygenated blood supply and said boundary" or "sustaining a demand for oxygen at the underperfused region for a period sufficient to convert the capillary network into an arterial network." Laufer fails to remedy the deficiencies of Sachinopoulou, as Laufer also fails to disclose these steps. Therefore, Sachinopoulou and Laufer, alone or in combination, fail to disclose each and every element of independent claims 1 and 5. Therefore, claims 1 and 5 are patentable over the combination of Sachinopoulou and Laufer. Because claims 2 and 3 depend from independent claim 1 and claims 6 and 7 depend from independent claim 5, the rejection of claims 2, 3, 6, and 7 should be withdrawn for at least the same reasons that claims 1 and 5 are patentable over Sachinopoulou and Laufer.

In addition, as explained above, Sachinopoulou fails to disclose, teach, or suggest introducing a stimulus, wherein the stimulus is a mechanical injury, and "where the depth and width of said channels, combined with the blood turbulence produced within the ventricle, is such as to minimize accumulation of blood clot material in the channels," as recited in claim 5. Laufer also fails to remedy this deficiency of Sachinopoulo. Therefore, the rejection of claims 6 and 7, which depend from claim 5, should be withdrawn for this additional reason.

New Claims 9-18

New claims 9-18 depend from independent claim 1 or independent claim 5, and therefore are patentable over Sachinopoulou and Laufer for at least the same reasons that claims 1 and 5 are patentable over Sachinopoulou and Laufer. Additionally, claims 9-18 recite various methods for sustaining a demand for oxygen. As explained above, neither Sachinopoulou nor Laufer discloses, teaches, or suggests a step of sustaining a demand for oxygen. In particular, neither Sachinopoulou nor Laufer discloses, teaches, or suggests any

of the methods for sustaining a demand for oxygen recited in claims 9-18. Therefore, claims 9-18 are patentable over Sachinopoulou and Laufer for this additional reason.

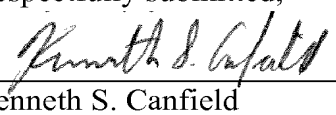
CONCLUSION

It is believed that claims 1-18 are in condition for allowance. Should the Examiner not agree with any of Applicants' positions or arguments herein, a telephonic or personal interview is respectfully requested to discuss and resolve any remaining issues.

No fee is believed due for this response. Should any fee(s) be due at this time, please charge such fee(s) to Jones Day Deposit Acct. No. 50-3013.

Respectfully submitted,

Date: August 31, 2007



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